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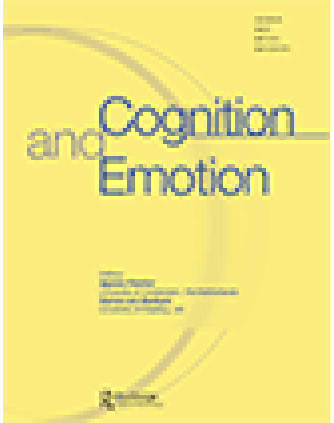

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Appraisal components, core relational themes, and the emotions

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Appraisal Components, Core Relational Themes, and the Emotions

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This study experimentally tests the contributions of specific appraisals, considered at both molecular (appraisal components) and molar (core relational themes) levels of analysis, to the experience of four emotions (anger, guilt, fear/anxiety, and sadness) using a two-stage directed imagery task. In Stage 1, subjects imagined themselves in scenarios designed to evoke appraisals hypothesised to produce either anger or sadness. In Stage 2, the scenarios unfolded in time to produce a second manipulation designed to systematically evoke the appraisals hypothesised to produce each of the four emotions under study. The results provided substantial support for the theoretically specified appraisal-emotion relationships for anger, guilt, and fear/anxiety. However, support for the predictions for sadness was weaker, partially due to ineffective manipulation of the relevant appraisals. Implications for the further development and testing of emotion theory are discussed.

INTRODUCTION

Recent evidence is consistent with a key premise of all cognitive theories of emotion (e.g. Frijda, 1986; Lazarus & Folkman, 1984; Leventhal, 1984; Roseman, 1984; Scherer, 1984), namely, that certain relational meanings concerning the implications of one's circumstances for personal well-being,

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achieved via cognitive appraisal, are associated with specific emotions (e.g. Conway & Bekerian, 1987; Frijda, Kuipers, & ter Schure, 1989; Roseman, Spindel, & Jose, 1990; Shaver, Schwartz, Kirson, & O'Connor, 1987; Smith & Ellsworth, 1985).

Although this evidence contributes to a comprehensive theory of cognition and emotion, a number of problems limit the conclusions that can presently be drawn. One of the most important of these is the way appraisal is conceptualised (see Lazarus & Smith, 1988; Smith & Lazarus, 1990).

Appraisal is an evaluation of what one's relationship to the environment implies for personal well-being. Each positive emotion is said to be produced by a particular kind of appraised benefit, and each negative emotion by a particular kind of appraised harm. The emotional response is hypothesised to prepare and mobilise the person to cope with the particular appraised harm or benefit in an adaptive manner, that is, to avoid, minimise, or alleviate an appraised harm, or to seek, maximise, or maintain an appraised benefit. Whether a particular set of circumstances is appraised as harmful or beneficial depends, in part, on the person's specific configuration of goals and beliefs. Appraisal thus serves the important mediational role of linking emotional responses to environmental circumstances on the one hand, and personal goals and beliefs on the other.

We have proposed that two distinct but related types of cognition are involved in achieving this linkage, but that only one of these directly results in emotion (e.g. Lazarus, 1991a; Lazarus & Folkman, 1984; Lazarus & Smith, 1988; Smith & Lazarus, 1990; Smith, Haynes, Lazarus, & Pope, submitted). First, a well-developed construal of the factual nature of one's circumstances, reflecting one's *knowledge* or *beliefs* about what is happening, is necessary. However, we do not believe this construal by itself is sufficient to produce emotion. Instead, we propose that the "facts" as represented in this construal must be evaluated, or *appraised*, with respect to their significance for personal harm or benefit for emotion to result. The implications for personal well-being that emerge from this appraisal comprise the relational meaning that, we think, lies at the heart of emotion. In our usage, appraisal is meant to encompass the most proximal cognitive variables that directly result in emotion.[1] We consider appraisal to be a sufficient condition of emotion, as well as a necessary one, although this latter position is clearly controversial (see Lazarus, 1991b).

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[1] In the present discussion we focus on the *contents* of adult appraisal rather than the formal cognitive processes underlying these contents or the precursors of these contents in infants. In particular, we do not mean to imply that appraisals are necessarily conscious or deliberate. Instead, we have consistently maintained that appraisal may often be unconscious and automatic (e.g. Lazarus, 1966, 1991a; Smith & Lazarus, 1990). Nor do we mean to imply that the appraisals relevant to emotion are necessarily identical for adults and infants. Although beyond the scope of the present article, we consider both the development of appraisal-emotion relationships and the formal cognitive processes underlying appraisal to be important research topics.

Previous examinations of cognition and emotion have tended to treat knowledge and appraisal as interchangeable. The resulting models intermix components of appraisal with components of knowledge and the subjective properties of the emotional response, producing considerable theoretical and empirical unclarity (cf. Lazarus & Smith, 1988; Scherer, 1988). Thus, the main goal of the present research was to isolate appraisal (as we have defined it) as best we could, and to examine the relationships between it and emotion. Further, in developing our specific appraisal model, we attempted to maximise the model's theoretical coherence by explicitly integrating it into the more general theory of stress and coping previously developed by Lazarus and his colleagues (e.g. Lazarus, 1966; Lazarus & Folkman, 1984).

The present research tests predictions of our model for four emotions—anger, guilt, sadness, and fear/anxiety—commonly thought to be responses to (appraised) actual or potential harm. Therefore, a brief summary of the model's predictions for these emotions follows. More complete treatment of the model and its theoretical underpinnings can be found elsewhere (Smith, 1991; Smith & Lazarus, 1990).

In describing the model, we should point out that it differs in several respects from the one currently advanced by Lazarus (1991a,c). The discrepancies arise because in the time since the collaborative research reported here was performed, Lazarus has made changes in his analysis of the appraisal components and core relational themes postulated for several emotions. However, the present model is not obsolete. Smith continues to advance it, and it provides the foundation of his research programme (e.g. Smith, Ellsworth, & Pope, 1990; Smith & Pope, 1992).

The differences that have arisen do not involve fundamental premises about the relationship between appraisal and emotion, but reflect relatively minor disagreements about the nature of specific variables, the number needed for an adequate causal analysis, and their relationships to specific emotions. These disagreements are genuine, interesting, and potentially important. Therefore, to maintain clarity about our respective positions, we conclude this article with a brief postscript that highlights the most relevant differences between the present model and the one currently advanced by Lazarus (1991a,c).

Appraisal Components and Core Relational Themes

We describe the relational meaning underlying each emotion at two levels of analysis, which represent complementary ways of conceptualising and assessing this meaning. The first level is molecular, and describes the specific judgements made by a person to evaluate particular relational harms and benefits. The adaptational issues at this level are single *components* of appraisal, which correspond closely to appraisal dimensions described in previous work (e.g. Frijda et al., 1989; Roseman, 1991; Scherer, 1984; Smith & Ellsworth, 1985). We have attempted to refine the components to reflect more clearly our conceptualisation of appraisal (cf. Lazarus & Smith, 1988).

To this we have added a second, more molar level of analysis that combines the individual appraisal components into summaries, or perhaps more accurately, gestalts of relational meaning, referred to as core relational themes.[2] A *core relational theme* is simply the central (therefore core) harm or benefit that underlies each of the negative and positive emotions. Whereas the individual appraisal components describe the specific questions evaluated in appraisal, the core relational themes efficiently capture the central relational meaning derived from the configuration of answers to these appraisal questions, which differs in each emotion.

For example, the core relational theme for sadness is proposed to be irrevocable loss. This relational meaning draws on more than a single appraisal component. There must be an appraised loss which, in turn, stems from evaluating (1) a goal commitment as being (2) threatened or harmed in a manner that (3) cannot be avoided or repaired. In our analysis, there are, in effect, three separate and distinct appraisal components, each of which makes an essential contribution to the complex relational meaning hypothesised to produce the emotion, but none of which individually constitutes the whole meaning.

Notably, the answers to the appraisal component questions are not conceptualised as causing the core relational themes in a mechanistic sense. Instead, the relationship between the appraisal components and core relational themes is one of logical or analytic causality: Each core relational theme is *defined* by a specific configuration of answers to several appraisal component questions. Thus, a specific configuration of appraisal components *implies* a particular relational meaning and vice versa—without any necessary causal ascription. In short, the appraisal components and core relational themes provide alternative ways of representing the *same* relational meanings associated with the various emotions. However, if one compares the appraisal components taken individually with the molar relational meanings as captured by the core relational themes, we would expect the latter to be more efficient in predicting emotion because they capture the meaning of the full configuration of appraisal components in a way that transcends the components' individual meanings—much in the way a sentence captures a complex idea that goes beyond the meanings of its individual words. The two levels of analysis have different properties, which, as we discuss later, provide for different uses in the study of emotion.

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[2] We are aware that Luborsky (1977, 1984) has used a similar term, "core conflictual relationship themes", with meanings that overlap but also differ from our core relational themes. His usage refers to the central and recurrent interpersonal scenarios of a troubled person. An example might be persons with a constant need to assert themselves with others, including loved ones, which, when enacted, leads to the vicious circle of rejection by the other, withdrawal by the needy person, and renewed but counterproductive efforts at assertion (see also Horowitz, 1988, on role relationship schemas). A major difference between Luborsky's usage and ours is the classic distinction between emotion traits and states. Because Luborsky is concerned with psychotherapy for dysfunctional people, his construct focuses on stable or recurrent themes, whereas ours focuses on the momentary themes of specific encounters.

Specific Appraisals in Anger, Guilt, Fear/Anxiety, and Sadness

Each appraisal component addresses one of the two general appraisal issues originally proposed by Lazarus and his colleagues as relevant to well-being under stress (e.g. Lazarus, 1966; Lazarus & Folkman, 1984): *primary appraisal* concerns whether and how the encounter is relevant to the person's well-being; and *secondary appraisal* concerns the person's resources and options for coping with the encounter.

The model utilises six appraisal components, two of primary appraisal, and four of secondary appraisal. The components of primary appraisal are motivational relevance and motivational congruence (or incongruence). *Motivational relevance* is an evaluation of the extent to which the encounter touches upon personal commitments (issues the person cares about), and thus the degree to which the encounter is personally relevant. *Motivational congruence* refers to the extent to which the encounter is consistent or inconsistent with the person's desires or goals.

The four components of secondary appraisal are accountability, problem-focused coping potential, emotion-focused coping potential, and future expectancy. *Accountability* determines who or what (oneself or someone/something else) is to receive the credit (if the encounter is motivationally congruent) or the blame (if it is motivationally incongruent) for the outcome of the encounter, and therefore who or what should be the target of any subsequent coping efforts. The two components of coping potential correspond to the two main means of reducing discrepencies between one's circumstances and one's desires and motivations (cf. Folkman & Lazarus, 1988; Kimble, 1990; Smith & Lazarus, 1990):

TABLE 1
Appraisal Components and Core Relational Themes Associated with 4 Harm-related Emotions

Emotion	*Core Relational Theme*	*Important Appraisal Components*
Anger	Other-blame	1. Motivationally relevant 2. Motivationally incongruent 3. Other-accountability
Guilt	Self-blame	1. Motivationally relevant 2. Motivationally incongruent 3. Self-accountability
Fear/Anxiety	Danger/Threat	1. Motivationally relevant 2. Motivationally incongruent 3. Low/Uncertain (emotion-focused) coping potential
Sadness	Irrevocable loss Helplessness about harm or loss	1. Motivationally relevant 2. Motivationally incongruent 3. Low (problem-focused) coping potential 4. Low future-expectancy

problem-focused coping potential reflects evaluations of the person's ability to act directly upon the situation to bring or keep it in accord with the person's desires; and *emotion-focused coping potential* refers to the perceived prospects of adjusting pyschologically to the encounter by altering one's interpretations, desires, and/or beliefs. *Future expectancy* refers to the possibilities, for *any* reason, of there being changes in the actual or psychological situation which could make the encounter seem more or less motivationally congruent.

Specific patterns of appraisals along the above components, we suggest, shape each of the four emotions under study. The postulated appraisal components and core relational themes for each emotion are listed in Table 1. The four emotions under study are *all* associated with various types of harm, and thus are characterised by motivational relevance and motivational incongruence. The components of secondary appraisal further define and differentiate the core relational themes that produce these emotions, and thus determine which specific emotion(s) will be experienced in the harmful or threatening encounter.

To illustrate, the core relational theme for anger is "other-blame", which is defined by combining primary appraisals of motivational relevance and motivational incongruence with a secondary appraisal of other-accountability. Both the primary appraisals and other-accountability are necessary for an appraisal of other-blame, because accountability does not translate to blame in the absence of motivational incongruence. If one's circumstances are appraised as beneficial (i.e. motivationally relevant and motivationally congruent) an appraisal of other-accountability will contribute to a core relational theme of "other-credit" and a very different affective state, such as gratitude, will result (cf. Smith, 1991).

The core relational theme for guilt is "self-blame". This theme is also defined by combining primary appraisals of motivational relevance and motivational incongruence with accountability, but in this case the accountability is assigned to oneself. As with other-blame, both the primary appraisals and self-accountability are required to produce self-blame; under beneficial conditions the appraisal of self-accountability contributes to a core relational theme of "self-credit" and results in feelings of pride (Smith, 1991).

The core relational theme for fear/anxiety is "danger" or "threat"—the perception that one will not be able to psychologically adjust to a harm should it occur. In this theme, with its focus on the inability to adjust to potential harm, the primary appraisals of motivational relevance and motivational incongruence are combined with secondary appraisals of low emotion-focused coping potential. In contrast, for sadness the core relational theme is one of *irrevocable loss* or *helplessness about loss*, which emphasises the inability to restore the loss or eliminate the harm. This theme is defined by combining secondary appraisals of low problem-focused coping potential and negative future expectations with primary appraisals of motivational relevance and motivational incongruence.

METHOD

The present research was designed to provide an experimental test of the above appraisal model for anger, guilt, fear/anxiety, and sadness. We elected to examine four harm-related emotions because we believed manipulating appraisals associated with these emotions, which differ with regard to secondary appraisal components, would provide a more sensitive test of the discriminant validity of the model than could be obtained by contrasting one or two benefit-related emotions with one or two harm-related ones.

Our strategy was to manipulate the relevant appraisals twice. Once by systematically varying the conditions to which subjects were initially exposed, and a second time by systematically attempting to vary the subjects' appraisals during the experimental encounter. We think the second manipulation provides a more powerful test of the strength and specificity of the appraisal-emotion relationships than has been possible in most previous studies, which have relied more heavily on retrospective techniques. We reasoned that by dynamically manipulating specific appraisals during an encounter we would be able to rule out a host of third factor explanations for any observed appraisal-emotion relationships. A directed imagery task was employed because of the use of imagery appears to be a reliable technique for evoking emotion in the laboratory (e.g. Lang, 1979; Smith, 1989; Smith, McHugo, & Lanzetta, 1986), and it affords a high degree of experimental control.

Overview of Research Design

Four hypothetical scenarios, each involving multiple stages of an emotional encounter as it unfolded over time, were written to manipulate appraisal. These scenarios were administered in a between-subjects design. Two of the scenarios were designed to evoke initially appraisals of other-blame, theoretically associated with anger. One of these was learning that a friend had betrayed a confidence (the friend scenario); the other described being persecuted by a teaching assistant (the TA scenario). The remaining two scenarios were designed to evoke appraisals of irrevocable loss and helplessness, theoretically associated with sadness. One involved learning that a favourite relative had cancer (the cancer scenario); the other, learning that one had performed poorly in an important course (the course scenario).

The story of each scenario unfolded in two stages. The *first stage* established the motivational relevance for the central character (whose role the subject was instructed to assume), as well as both the motivational incongruence (or conflict) and the component(s) of secondary appraisal appropriate to the relational theme the scenario was intended to evoke. Thus the friend and TA scenarios emphasised other-accountability, whereas the cancer and course scenarios emphasised low coping potential and low future expectancy.

To allow a more explicit examination of the emotional effects of changes in appraisal over time, multiple versions of the *second stage* were written for each scenario, creating a second manipulation nested within the first. Whereas in Stage 1 each scenario was associated with a single appraisal condition, in Stage 2 different versions of each scenario were written to create four appraisal conditions: other-blame; self-blame; threat; and loss/helplessness. To provide closure, there was also a *third stage* in which subjects were asked to resolve the scenario.

Subjects sequentially imagined themselves in the events of their assigned scenario, and at the end of Stages 1 and 2 they reported on their appraisals and emotions in that stage. This allowed systematic manipulations of appraisals as the scenario progressed and assessment of how these appraisals affected the emotions experienced. Table 2 summarises the overall experimental design.

TABLE 2
Overview of the Experimental Design

	Appraisals Manipulated within Each Experiemental Cell		
Scenario Content	*Stage 1*	*Stage 2*	*Cell N*
Friend	Other-blame	Other-blame	12
		Self-blame	13
		Threat	12
		Loss/Helplessness	12
TA	Other-blame	Other-blame	12
		Self-blame	12
		Threat	13
		Loss/Helplessness	12
Cancer	Loss/Helplessness	Other-blame	12
		Self-blame	11
		Threat	12
		Loss/Helplessness	12
Course	Loss/Helplessness	Other-blame	12
		Self-blame	12
		Threat	12
		Loss/Helplessness	12

Subjects, Experimental Design, and Scenario Contents

Subjects were 193 University of California at Berkeley undergraduates (89 males, 104 females) who participated as part of an introductory psychology course requirement. Subjects were tested individually, and each was randomly assigned to one of 16 experimental cells, resulting in between 11 and 13 subjects being assigned to each cell (see Table 2).

The experiment was organised as a 2 (Stage 1 manipulation) × 4 (Stage 2 manipulation) between-subjects design. There were two scenarios for each condition, serving as replications, to yield the 16 experimental cells. Subjects sequentially imagined themselves within each stage to simulate the experience of the encounter as it unfolded. By varying the descriptions subjects received to guide their imagery, appraisal, at the level of both appraisal components and core relational themes, was manipulated in the first and second stages. All descriptions avoided any mention of emotional reactions to the depicted events to ensure that the subjects' reactions were guided by the provided contextual and cognitive cues.

For example, the first stage of the friend scenario established the subject's situation as important and motivationally incongruent, and suggested other-accountability:

> You have a very close friend with whom you share much intimate detail about your life and emotions. This relationship is very important to you and the friend is your only confidant. You have revealed to him (her) that although you have an initimate, long-standing love relationship, you have also been seeing someone on the side. You impress upon your friend that it is very important to you that what you've revealed remains a strict secret, because you don't want your main lover to find out about the other relationship.
>
> One day after class, you are talking to another student, who, in passing, indicates he (she) knows your secret.

Four distinct versions of the second stage for each scenario were used to create the Stage 2 manipulation. These versions correspond to the four appraisal conditions. Each version consisted of two parts. The first part was the same for each version, and simply added a factual development to the encounter. To illustrate, in the friend scenario:

> You seek out your friend and confront him (her) with your suspicion that he (she) has revealed your secret. At first your friend denies being the source of the leak, but under intense questioning admits that he (she) told the other student and tries to make light of the whole incident.

The second part contained the appraisal manipulation and necessarily differed across appraisal conditions. In addition to motivational relevance and motivational incongruence, the four versions emphasised the secondary appraisal components defining the themes of other-blame, self-blame, threat, and loss/helplessness, respectively, as well as the themes themselves.

The other-blame version emphasised someone else's accountability. In the friend scenario:

> You can't believe your friend betrayed your trust like this, especially since he (she) knew how important this secret was to you. You believe that for the first time you're seeing your friend for what he (she) really is, and that what he's (she's) done is totally inexcusable. You wonder why you ever liked him (her).

In contrast, the self-blame version emphasised the subjects' own accountability:

> You realise that you've made a mess of things, and are largely to blame for what has happened. You now think that you were very wrong to cheat on your main lover in the first place, and you now see that the knowledge of your affair was simply too much of a burden to place upon your friend.

The threat version emphasised the subject's low emotion-focused coping potential by raising uncertainties about both the long-term implications of the encounter and the subject's ability to adapt to those implications:

> You wonder how far your secret has spread, who knows about your affair, and how much social harm you will suffer now that they know. You realise there is serious danger that you won't be able to salvage things if your main lover learns of your secret.

Finally, the loss/helplessness version emphasised both the subject's inability to alter the undesirable situation (low problem-focused coping potential) and the absence of any expectation for improvement (low future expectancy):

> You wish that you could change your friend so that he (she) wouldn't do things like this, but you know that there's nothing you can do. You realise that because of what's happened the close trust you once shared with this person is gone, and you're certain that you will never be able to feel the same way about this person again. The end of this trust and friendship is a great personal loss.

The complete text for the first two stages of the other three scenarios is presented in the Appendix. The third stage simply provided the subjects with an opportunity to resolve the episode.

Procedure

Subjects participated in the experiment as part of a study of "emotion, stress, and coping". They were provided with three clearly labelled envelopes containing the three stages of their assigned scenario. They were told that for each stage they should:

> Read through the description of the stage, and picture the situation that is described to you in your mind as best you can. Pretend that you are actually living through this experience . . . Try to mentally create the thoughts and feelings you would have if you were actually in this situation. When you . . . are experiencing the feelings it [the situation] evokes, please answer the questions that follow . . . as you think you would if you were actually experiencing the situation.

For each stage, subjects first imagined themselves in the described situation, and then to ensure engagement in the imagery task, they wrote a few sentences describing their reactions. Next, they completed three questionnaires designed to measure their appraisals of the stage (in terms of both components and relational themes) and their emotional reactions to it. The order in which the questionnaires were presented was counterbalanced across subjects, with each subject receiving the same order for all stages. After completing the questionnaires for a stage, the subjects repeated the entire procedure for the next stage, until all three stages had been completed. At that time, the research purposes were explained and any questions were answered.

Measures

Appraisal Components. The subjects' appraisals for each stage were assessed with seven face-valid items designed to measure motivational relevance, motivational incongruence, accountability, problem-focused coping potential, emotion-focused coping potential, and future expectancy. A single item was used to measure each component, with the exception of two accountability items to measure self-accountability (i.e. "To what extent do you consider YOURSELF responsible for this situation?") and other-accountability (i.e. "To what extent do you consider SOMEONE ELSE responsible for this situation?"). Four items were rated on scales ranging from 1 (not at all) to 11 (extremely). The three scales measuring future expectancy and coping potential were bipolar and ranged from −5 (low coping potential, negative expectations) to +5 (high coping potential, positive expectations).

Core Relational Themes. A second questionnaire contained 42 face-valid items representing the core relational themes hypothesised to be associated with a variety of emotions. Each item reflected a core relational theme for a particular emotion (e.g. two items measuring irrevocable loss/helplessness were: "I feel helpless"; and "Nothing can ever be done to fix this bad situation"). Subjects indicated on 9-point scales (1–9) the extent to which each statement characterised their thoughts during the stage they had just imagined. Four scales, measuring the core relational themes theoretically associated with anger, guilt, fear/anxiety, and sadness, were recovered for analysis. Scale scores were computed by taking the mean of the contributing items. Internal consistencies were estimated by computing the mean coefficient alpha for the first two scenario stages. The recovered scales and their estimated reliabilities were: other-blame (6 items: $\alpha = 0.89$); self-blame (3 items: $\alpha = 0.89$); threat (3 items: $\alpha = 0.69$); and loss/helplessness (6 items: $\alpha = 0.89$).

Emotions. An emotion questionnaire (Ellsworth & Smith, 1988a) required subjects to rate on 9-point scales (1–9) the extent to which each of 33 emotional adjectives characterised their emotional state during the stage they had just imagined. Using the same procedures as for the core relational theme measures, scales were recovered to measure anger (6 items: $\alpha = 0.86$), guilt (3 items: $\alpha = 0.69$), fear/anxiety (3 items: $\alpha = 0.95$), and sadness (3 items: $\alpha = 0.73$).

Analytic Strategy

Two sets of analyses within each stage were conducted for each of the four emotions to examine the effectiveness of the manipulations in eliciting the desired appraisals, and to assess the effects of the appraisals on emotion. Multiple regression equations using a priori contrasts examined the overall effects of the appraisal manipulations (Cohen & Cohen, 1983, pp. 204–217; Rosenthal & Rosnow, 1985). Then, path analyses evaluated the hypothesised causal sequence from scenario to appraisal to emotion, for each emotion separately. In addition, two sets of follow-up analyses were conducted to examine further the discriminant and predictive validity of the appraisal model.

Stage 1 Manipulation. The effects of the Stage 1 manipulation were measured by three orthogonal contrasts. Conceptually, this manipulation created two experimental conditions, other-blame and loss/helplessness, both with two replications involving different scenarios. The first contrast tested the main effects of the manipulation, and the second and third contrasts tested the replicability of any significant manipulation effects by testing for differences between the two scenarios within each condition.

Stage 2 Manipulation. The effects of the Stage 2 manipulation were measured with 12 additional contrasts that completed the partitioning of the full 16-cell between-subjects design. To adequately test for the predicted effects, the set of contrasts differed for each emotion.

The first three contrasts tested the main effects of the Stage 2 manipulation. The first is of greatest theoretical interest, and pitted the condition hypothesised to produce the appraisal of interest (i.e. the other-blame condition for anger, the self-blame condition for guilt, the threat condition for fear/anxiety, and the loss/helplessness condition for sadness) against the other three combined conditions. To determine the next two contrasts the two conditions involving blame were paired, as were the ones involving loss-helplessness and threat. The remaining member of the pair split by the first contrast was pitted against the other two conditions to form the second contrast. The third contrast pitted these latter two conditions against each other. For example, the first three contrasts of the anger analysis were: (1) other-blame vs. the other three conditions; (2) self-blame vs. combined loss/helplessness and threat; and (3) loss/helplessness vs. threat.

The remaining nine contrasts always tested for interactions between the main effects of the Stage 2 manipulation (as coded by the first three contrasts of the set) and the effects of the Stage 1 manipulation (as reflected in the three Stage 1 contrasts).

For the analysis of each emotion (in both stages), the variables consisted of the emotion, its proposed core relational theme (other-blame for anger; self-blame for guilt; threat for fear/anxiety; and loss/helplessness for sadness), and the appraisal components hypothesised to define that theme. Motivational relevance and motivational incongruence were always included, but the components of secondary appraisal were limited to those most theoretically relevant to the emotion (other-accountability for anger; self-accountability for guilt; emotion-focused coping potential for fear/anxiety; and both problem-focused coping potential and future expectancy for sadness).

In addition, to assess accurately the effectiveness of the Stage 2 manipulation in *changing* appraisal and emotion, all analyses in this stage statistically controlled for all relevant Stage 1 variables (i.e. the emotion, the theme, and the relevant appraisal components) by entering them into the analyses prior to the variables of interest.

In constructing the theoretically derived path analyses the contrasts coding the manipulation effects were always assumed to be first in the causal sequence and to be followed, in order, by the appraisal components, the core relational themes, and the emotions. No attempt was made to assign causal priority among the appraisal components.

The ordering of the appraisal components and core relational themes was not intended to reflect a true causal process, because, as discussed above, the components and themes reflect alternative descriptions of the *same* relational meanings. Instead, the ordering of the appraisal variables reflects the emergent status of the core relational themes. Treating the components as "causally prior" to the themes allowed us to examine the degree to which the individual appraisal components contributed to the *definition* of the core relational themes, as hypothesised.

The direct effects on each variable were estimated by regressing the variable simultaneously on all causally prior variables. Thus, in Stage 1 the independent variables included any prior appraisal variables and the three scenario contrasts. In Stage 2 they included any causally prior variables from the second stage, all 15 constrasts, and all relevant Stage 1 variables.

Due to the complexity of the experimental design the results to be presented were simplified as follows: first, in presenting the findings for Stage 2, the effects of variables from the first stage are not depicted because they reveal little beyond significant stability across stages for all variables. In addition, all significant effects (at $P < 0.05$, two-tailed) directly relevant to the experimental hypotheses (e.g. main effects of the appraisal manipulations) are presented, but additional effects (e.g.

manipulation-by-scenario interactions) are discussed only if they in some way qualify the interpretation or generalisability of a theoretically relevant effect. Finally, in depicting the results of the second appraisal manipulation, simple change scores (from Stage 1 to Stage 2) are presented in lieu of the regression residuals upon which the statistical inferences are based, because the change scores preserve information about the absolute direction of change that is lost in the residuals, and the change scores were highly correlated with the residuals for each variable (average $r = 0.94$).

Predictions

Two sets of predictions corresponded to the two sets of appraisal manipulations. First, in Stage 1 the friend and TA scenarios were designed to evoke appraisals of other-blame, whereas the cancer and course scenarios were designed to evoke appraisals of loss/helplessness. Because both themes involve appraisals of high motivational relevance and high motivational incongruence, no systematic differences were anticipated for these appraisal components. However, the friend and TA scenarios, relative to the cancer and course ones, were expected to be high in both other-accountability and other-blame, whereas the cancer and course scenarios were expected to be relatively low in problem-focused coping potential and future expectancy and relatively high in loss/helplessness. These appraisal differences were expected to result in relatively high levels of anger in the friend and TA scenarios, and relatively high levels of sadness in the cancer and course scenarios. No systematic predictions were advanced for self-accountability, self-blame, and guilt, or for emotion-focused coping potential, threat, and fear-anxiety.

For the Stage 2 manipulation, motivational relevance and motivational incongruence were again not expected to vary across conditions. However, through appropriate changes in the relevant component(s) of secondary appraisal, each manipulation condition was expected to produce elevated levels of the targeted core relational theme, and it was expected that these themes would be associated with increases in the theoretically linked emotion. Thus, other-accountability, other-blame, and anger were expected to be elevated in the other-blame condition; self-accountability, self-blame, and guilt were expected to be elevated in the self-blame condition; emotion-focused coping potential was expected to be depressed, and both threat and fear/anxiety were expected to be elevated in the threat condition; and depressed levels of both problem-focused coping potential and future expectancy were expected to be accompanied by elevations in loss/helplessness and sadness in the loss/helplessness condition.

In all cases the path analyses were expected to provide support for the hypothesised sequence. The appraisal manipulation was expected to have direct effects on the relevant components of secondary appraisal, but, because these components help to define the core relational themes, the effects on the core relational themes were expected to be mediated through the appraisal components (as evidenced by direct effects of the components on the themes after controlling for the effects of the manipulation).

In addition, effects of the manipulation on emotion were expected to be mediated through the relational meanings (considered at both molecular and molar levels of analysis). However, because we consider the core relational themes to be more efficient summaries of the relational meanings than the individual appraisal components, we anticipated the themes would demonstrate direct effects on the emotions even after controlling for the contributions of the individual appraisal components. Conversely, to the extent that the core relational themes effectively captured the contributions of the individual appraisal components, the components of secondary appraisal (hypothesised to be responsible for differentiating one core relational theme from another) were not expected to exert direct effects on the emotions after controlling for the contributions of the themes.

RESULTS AND DISCUSSION

The results for both sets of manipulations are presented for each of the four emotions in turn, and the follow-up analyses are presented last. Table 3 presents the means depicting the main effects of the appraisal manipulations on all variables considered (i.e. appraisal components, core relational themes, and emotions).

Anger

Stage 1 Manipulation. Examination of Table 3 indicates that, as assumed, appraisals of motivational relevance (overall $M = 10.03$) and motivational incongruence (overall $M = 9.52$) were generally rated high. However, both appraisal components were higher in the loss/helplessness condition than in the other-blame one, and although small in absolute magnitude, these differences were statistically significant (motivational relevance: $\beta = -0.24$, $t(189) = -3.40$, $P < 0.001$; motivational incongruence: $\beta = -0.18$, $t(189) = -2.52$, $P < 0.05$).

More importantly, however, the appraisal manipulation produced the anticipated differences in other-accountability and other-blame, and these differences were accompanied by the predicted differences in anger. Other-accountability, $\beta = 0.28$, $t(189) = 5.07$, $P < 0.001$, other-blame, $\beta = 0.66$, $t(189) = 12.64$, $P < 0.001$, and anger, $\beta = 0.51$, $t(189) = 8.69$,

TABLE 3
Means for Main Effects of both Appraisal Manipulations

Measure	*Manipulation Conditions*					
	Stage 1 Manipulation		*Stage 2 Manipulation*			
	Other-blame	*Loss/Helplessness*	*Other-blame*	*Self-blame*	*Threat*	*Loss/Helplessness*
Appraisal components						
Motivational relevance	9.72	10.34	−0.44	−0.25	0.10	−0.13
Motivational incongruence	9.18	9.87	−0.29	−0.48	0.22	0.08
Other-accountability	7.72	6.00	1.27	−2.42	−0.33	−0.02
Self-accountability	6.13	6.31	−1.38	1.88	−0.35	−0.81
Emot. foc. coping pot.	1.45	1.63	0.38	0.40	−0.51	−0.48
Prob. foc. coping pot.	0.22	−0.65	−0.19	0.38	−0.10	−0.27
Future expectancy	1.27	0.60	−0.65	−0.21	−0.96	−0.71
Core relational themes						
Other-blame	5.06	2.32	1.21	−1.05	0.53	−0.04
Self-blame	4.34	3.89	−0.97	1.60	0.10	−0.47
Threat	4.44	4.54	−0.47	−0.63	0.88	−0.08
Loss/Helplessness	3.96	4.63	0.37	−0.05	0.78	0.79
Emotions						
Anger	6.07	4.26	0.50	−0.93	0.11	−0.36
Guilt	4.29	5.11	−0.74	1.24	−0.05	−0.31
Fear/Anxiety	4.87	6.36	−0.92	−0.64	0.95	−0.30
Sadness	5.56	6.72	−0.40	−0.09	−0.07	0.22

Note. All means for Stage 1 reflect raw ratings for each scale. All means for Stage 2 reflect change scores from Stage 1 to Stage 2. Although change scores are reported here and in the text to preserve information about the absolute sign of change, all inferential statistics for Stage 2 data are based on residualised Stage 2 scores, obtained for each variable by partialling out the variance attributable to that variable in Stage 1.

$P < 0.001$, were each significantly higher in other-blame condition than in the loss/helplessness one.

The path analysis provided clear support for the proposed model. As predicted, controlling for the effects of the manipulation, other-accountability contributed directly to the core relational theme of other-blame, $\beta = 0.38$, $t(186) = 6.17$, $P < 0.001$, which in turn, had a strong direct effect on anger, even after controlling for the contributions of the individual appraisal components, $\beta = 0.51$, $t(185) = 6.84$, $P < 0.001$. After controlling for other-blame, however, other-accountability did not contribute directly to anger, $\beta = -0.01$, $t(185) < 1$, ns.

Contrary to expectations, comparison to the two different scenarios of loss/helplessness revealed a dissociation between other-accountability and other-blame in the cancer scenario. Comparison of the cancer and course scenarios indicated that other-accountability was elevated in the cancer scenario (cancer $M = 8.35$, course $M = 3.65$), $\beta = 0.56$, $t(189) = 9.96$, $P < 0.001$, but that this did not translate to either other-blame or anger. The cancer and course scenarios did not differ in the levels of other-blame they evoked (cancer $M = 2.33$, course $M = 2.32$), $\beta = 0.01$, $t(189) < 1$, ns, and anger was actually significantly lower in the cancer scenario ($M = 3.54$) than in the course scenario ($M = 4.97$), $\beta = -0.28$, $t(189) = -4.89$, $P < 0.001$.

Stage 2 Manipulation. The results of the Stage 2 manipulation offer strong support for the predictions for anger. As reflected in the means shown in Table 3, relative to the other three conditions, the other-blame condition resulted in elevated levels of other-accountability, $\beta = 0.28$, $t(172) = 5.82$, $P < 0.001$, other-blame, $\beta = 0.26$, $t(172) = 6.55$, $P < 0.001$, and anger, $\beta = 0.18$, $t(172) = 3.60$, $P < 0.001$. Further, although not anticipated (but consistent with the model), relative to the combined threat and loss/helplessness conditions, the self-blame condition resulted in significantly reduced levels of other-accountability, $\beta = -0.22$, $t(172) = -4.54$, $P < 0.001$, other-blame, $\beta = -0.23$, $t(172) = -5.87$, $P < 0.001$, and anger, $\beta = -0.15$, $t(172) = -3.05$, $P < 0.01$.

The effects on anger of the other-blame manipulation did not interact with the first appraisal manipulation. However, the effectiveness of the self-blame manipulation in reducing anger did. This manipulation reduced other-accountability ($M = -3.08$), other-blame ($M = -1.91$), and anger ($M = -1.61$) more in the two scenarios in which they had previously been elevated (friend and TA), than in the scenarios originally associated with loss/helplessness (cancer and course; other-accountability: $M = -1.69$, $\beta = -0.18$, $t(172) = -3.68$, $P < 0.001$; other-blame: $M = -0.17$, $\beta = -0.23$, $t(172) = -5.96$, $P < 0.001$; anger: $M = -0.21$, $\beta = -0.18$, $t(172) = -3.68$, $P < 0.001$).

The path analysis indicated that, in accord with predictions, changes in other-accountability directly contributed to changes in other-blame, $\beta = 0.43$, $t(169) = 8.31$, $P < 0.001$, which, in turn, directly influenced the changes in anger, $\beta = 0.39$, $t(168) = 3.80$, $P < 0.001$. As in the first stage, after controlling for the changes in other-blame, changes in other-accountability did not contribute directly to the changes in anger, $\beta = 0.07$, $t(168) < 1$, ns.

Guilt

Stage 1 Manipulation. The Stage 1 manipulation was not expected to influence appraisals of self-blame or feelings of guilt systematically, and consistent with this expectation, the first stage analyses of self-accountability, self-blame, and guilt primarily revealed effects specific to individual scenarios that will not be considered in detail. However, comparison of the cancer and course scenarios revealed a dissociation between emotion and appraisal in the cancer scenario somewhat analogous to the one observed for anger. Both self-accountability ($M = 4.13$) and self-blame ($M = 2.43$) were significantly lower in the cancer scenario than in the course scenario (self-accountability, $M = 8.50$, $\beta = -0.52$, $t(189) = -9.80$, $P < 0.001$; self-blame: $M = 5.35$, $\beta = -0.45$, $t(189) = -7.88$, $P < 0.001$). However, guilt was elevated equally in both scenarios (Cancer $M = 5.10$, Course $M = 5.11$), $\beta = 0.00$, $t(189) < 1$, ns. The net effect of this dissociation was that although the combined loss/helplessness scenarios did not reliably differ from the combined other-blame ones in terms of either self-accountability, $\beta = -0.03$, $t(189) < 1$, ns, or self-blame, $\beta = 0.10$, $t(189) = 1.73$, $P = 0.09$, guilt was significantly higher in the loss/helplessness scenarios ($M = 5.11$) than in the other-blame ones ($M = 4.29$), $\beta = -0.21$, $t(189) = -3.74$, $P < 0.001$.

This one anomaly aside, the results of the path analysis for guilt were largely consistent with predictions. Appraisals of self-accountability contributed directly to self-blame, $\beta = 0.71$, $t(186) = 12.91$, $P < 0.001$, which, in turn, directly influenced guilt, $\beta = 0.38$, $t(185) = 4.24$, $P < 0.001$, but self-accountability did not contribute directly to guilt, $\beta = 0.15$, $t(185) = 1.59$, $P = 0.11$.

Stage 2 Manipulation. The results of the Stage 2 manipulation were straightforward. As can be seen in Table 3, relative to the other three conditions, the self-blame condition resulted in elevated levels of self-accountability, $\beta = 0.39$, $t(172) = 8.28$, $P < 0.001$, self-blame, $\beta = 0.37$, $t(172) = 7.90$, $P < 0.001$, and guilt, $\beta = 0.35$, $t(172) = 6.37$, $P < 0.001$. Further, the path analysis indicated that changes in self-accountability contributed directly to changes in self-blame, $\beta = 0.55$, $t(169) = 8.82$, $P <$

0.001, and changes in self-blame contributed directly to changes in guilt, $\beta = 0.32$, $t(168) = 3.24$, $P < 0.005$. In addition, the changes in self-accountability contributed directly to the changes in guilt, $\beta = 0.27$, $t(168) = 2.79$, $P < 0.01$.

Fear/Anxiety

Stage 1 Manipulation. The Stage 1 manipulation did not directly vary appraisals relevant to fear/anxiety. Nonetheless, as indicated in Table 3, fear/anxiety was significantly higher in the loss/helplessness scenarios than in those involving other-blame, $\beta = -0.31$, $t(189) = -4.68$, $P < 0.001$, but the corresponding effects were not observed for either emotion-focused coping potential or threat, both *t*s < 1, ns. Rather, examination of the individual scenarios indicated that fear/anxiety and its theoretically relevant appraisals (low emotion-focused coping potential and high threat) were elicited in the two loss/helplessness scenarios (which did not significantly differ) and, to a lesser degree, in the friend scenario. Relative to the TA scenario, emotion-focused coping potential tended to be depressed in the friend scenario (Friend $M = 0.98$; TA $M = 1.92$), $\beta = -0.13$, $t(189) = -1.87$, $P = 0.06$, and both threat (Friend $M = 5.02$; TA $M = 3.86$), $\beta = 0.23$, $t(189) = 3.23$, $P < 0.01$, and fear (Friend $M = 5.84$; TA $M = 3.90$), $\beta = 0.29$, $t(189) = 4.40$, $P < 0.001$, were elevated.

The path analysis indicated that the observed variation in fear/anxiety was largely mediated through appraisal: Low emotion-focused coping potential contributed to the theme of threat, $\beta = -0.53$, $t(186) = -8.88$, $P < 0.001$, which in turn, had a positive direct effect on fear-anxiety, $\beta = 0.40$, $t(185) = 5.70$, $P < 0.001$. Emotion-focused coping potential did not directly affect fear/anxiety, however, $\beta = -0.02$, $t(185) < 1$, ns.

Stage 2 Manipulation. The results of the Stage 2 manipulation provide further support for the predictions for fear/anxiety. As shown in Table 3, relative to the other three conditions, the threat condition resulted in reduced levels of emotion-focused coping potential, $\beta = -0.10$, $t(172) = -2.10$, $P < 0.05$, and elevated levels of both threat, $\beta = 0.15$, $t(172) = 2.82$, $P < 0.01$, and fear, $\beta = 0.18$, $t(172) = 4.40$, $P < 0.001$. Further, although not anticipated, relative to the combined self- and other-blame conditions, the loss/helplessness condition produced reduced levels of emotion-focused coping potential, $\beta = -0.13$, $t(172) = -2.72$, $P < 0.01$, and elevated levels of threat, $\beta = 0.25$, $t(172) = 4.84$, $P < 0.001$, and fear/anxiety, $\beta = 0.23$, $t(172) = 5.28$, $P < 0.001$. The path analysis indicated that reductions in emotion-focused coping potential contributed directly to increases in threat, $\beta = -0.44$, $t(169) = -5.61$, $P < 0.001$, which in turn directly influenced increases in fear/anxiety, $\beta = 0.31$, $t(168) = 4.96$, $P <$

0.001. In addition, reductions in emotion-focused coping potential contributed directly to increases in fear/anxiety, $\beta = -0.17$, $t(168) = -2.44$, $P < 0.05$.

Sadness

Stage 1 Manipulation. As indicated in Table 3, the main effects of the Stage 1 manipulation for sadness were largely consistent with predictions. The loss/helplessness scenarios produced more pessimistic appraisals of problem-focused coping potential than did the other-blame ones, $\beta = 0.18$, $t(189) = 2.60$, $P < 0.05$, and tended to produce more pessimistic appraisals of future expectancy, $\beta = 0.12$, $t(189) = 1.80$, $P = 0.07$. These appraisals were accompanied by increased levels of loss/helplessness, $\beta = -0.19$, $t(189) = 2.69$, $P < 0.01$, and sadness, $\beta = -0.32$, $t(189) = 2.60$, $P < 0.05$.

However, inspection of the individual scenarios indicates that these anticipated differences primarily were due to the cancer scenario which, relative to the course scenario, produced particularly pessimistic appraisals of problem-focused coping potential (Cancer $M = -1.54$, Course $M = 0.25$), $\beta = -0.26$, $t(189) = -3.76$, $P < 0.001$, and future expectancy (Cancer $M = -0.52$, Course $M = 1.73$), $\beta = -0.30$, $t(189) = -4.33$, $P < 0.001$; and elevated levels of loss/helplessness (Cancer $M = 5.05$, Course $M = 4.23$), $\beta = 0.16$, $t(189) = 2.21$, $P < 0.01$, and sadness (Cancer $M = 7.07$, Course $M = 6.37$), $\beta = 0.13$, $t(189) = 2.06$, $P < 0.05$. Further, although there were no differences on any relevant appraisal variables (i.e. problem-focused coping potential, future expectancy, or loss/helplessness), the friend scenario resulted in significantly more sadness than the TA scenario (Friend $M = 6.35$; TA $M = 4.77$), $\beta = 0.32$, $t(189) = 4.90$, $P < 0.001$.

Although unable to account for this latter effect, the path analysis nonetheless indicated that the Stage 1 variations in sadness were generally consistent with the theoretical model. Controlling for scenario content, appraisals of both problem-focused coping potential, $\beta = -0.47$, $t(185) = -6.62$, $P < 0.001$, and future expectancy, $\beta = -0.19$, $t(185) = -2.66$, $P < 0.01$, contributed negatively to the core relational theme of loss/helplessness, which in turn directly influenced feelings of sadness, $\beta = 0.20$, $t(184) = 2.69$, $P < 0.01$. Neither future expectancy, $\beta = 0.01$, $t(184) < 1$, ns, nor problem-focused coping potential, $\beta = -0.12$, $t(184) = -1.50$, $P = 0.14$, contributed directly to sadness.

Stage 2 Manipulation. The results of this manipulation provide, at best, tentative support for the model for sadness. Examination of Table 3 indicates that the loss/helplessness manipulation was largely ineffective in eliciting the intended appraisals. Problem-focused coping potential was only marginally more pessimistic in the loss/helplessness condition than the other three, $\beta = -0.10$, $t(171) = -1.66$, $P = 0.10$, and future expectancy did not significantly differ in this condition relative to the other three, $\beta = -0.03$, $t(171) < 1$, ns.

Although the core relational theme of loss/helplessness increased from the first to second stages in the loss/helplessness condition as intended, this increase was not reliably different from the changes in the other three conditions, $\beta = 0.09$, $t(171) = 1.55$, $P = 0.12$, largely because loss/helplessness also increased significantly in the threat condition relative to the combined self- and other-blame conditions, $\beta = 0.12$, $t(171) = 2.11$, $P < 0.05$. However, sadness was not significantly higher in the loss/helplessness condition relative to the other three, $\beta = 0.06$, $t(171) = 1.20$, ns, nor was it significantly elevated in the threat condition relative to the blame conditions, $\beta = 0.05$, $t(171) = 1.04$, ns. Thus sadness did not accompany these elevations in loss/helplessness.

Nonetheless, although not attributable to the appraisal manipulation, the path analysis indicated that the between-subject variation in sadness was consistent with the proposed model: Changes in both problem-focused coping potential, $\beta = -0.30$, $t(167) = -4.26$, $P < 0.001$, and future expectancy, $\beta = -0.26$, $t(167) = -3.17$, $P < 0.005$, contributed directly to changes in loss/helplessness, which, in turn, contributed directly to changes in sadness, $\beta = 0.28$, $t(166) = 3.52$, $P < 0.001$. Neither problem-focused coping potential, $\beta = 0.00$, $t(166) < 1$, ns, nor future expectancy, $\beta = 0.15$, $t(166) = 1.66$, $P < 0.10$, contributed directly to changes in sadness.

Follow-up Analyses of Discriminant and Predictive Validity

We believe the above analyses provide strong support for the predictions of the appraisal model for anger, guilt, and fear/anxiety, with the predictions for sadness receiving weaker support. By demonstrating that the various manipulations differentially produced the intended changes in appraisal components and core relational themes, and that these changes were associated with predicted changes in emotion, they suggest considerable discriminant validity for the model.

However, by considering each emotion separately, the above analyses do not preclude the possibility that, in addition to being associated with their theoretically relevant appraisals, the emotions are just as strongly associated with other appraisals theoretically associated with different emotions. For instance, it is possible that appraisals of threat are as closely associated with appraisals of future expectancy as they are with emotion-focused coping potential, or that fear/anxiety is as strongly associated with appraisals of loss/helplessness as with threat, and so on.

Further, the above analyses were designed to examine the relationships between appraisals and emotion considering both levels of relational meaning (i.e. appraisal components and core relational themes) simultaneously. However, the relative abilities of appraisal components and core relational themes to predict emotions are also of considerable interest.

In the path analyses the core relational themes consistently exerted strong direct effects on their associated emotions after controlling for the contributions of the appraisal components, but the secondary appraisal components did not consistently exert direct effects on the emotions after controlling for the contributions of the core relational themes. This lends support to our view of the themes as efficient molar summaries of the relational meanings associated with the various emotions.

Nevertheless, the presence of the themes in these analyses may have obscured the ability of the appraisal components to predict the emotions. One possibility is that the consistent effects of the themes were due to inadequate conceptualisation or measurement of the appraisal components. This possibility arises because our system of components is somewhat simpler than most previous dimensional systems (e.g. Ellsworth & Smith, 1988b; Frijda et al., 1989), and because the components were measured with single-item scales.

We performed two final sets of analyses to examine both of the above issues. The first set evaluated the discriminant and predictive validity of the overall appraisal model, and the second set directly compared the relative abilities of the appraisal components and core relational themes to predict their theoretically relevant emotions.

In the first set, the discriminant validity of the model was evaluated by examining the correlations between the components of secondary appraisal and the core relational themes, and between the core relational themes and the emotions, for both Stages 1 and 2. To the extent that there is solid discriminant validity, each individual component of secondary appraisal should be most highly correlated with the core relational theme it was expected to help define, and each core relational theme should be most highly correlated with its theoretically associated emotion. The results of these analyses are presented in Table 4.

The results for both of the experimental stages are very similar, and their implications parallel those of the earlier emotion-specific analyses. The model received strong support for anger, guilt, and fear/anxiety, but the evidence in support of sadness was weaker. For the first three emotions the theoretically linked components of secondary appraisal and core relational themes were always significantly more highly correlated with each other than with any other theme or component, and the theoretically linked core relational themes and emotions always displayed similar relations.

TABLE 4

Analyses of Discriminant Validity: Within-stage Correlations between Secondary Appraisal Components and Core Relational Themes, and between Core Relational Themes and Emotions

Secondary Appraisal Components	*Stage 1 Core Relational Themes* Other-blame	Self-blame	Threat	Loss/Helplessness	*Stage 2 Core Relational Themes* Other-blame	Self-blame	Threat	Loss/Helplessness
Other-accountability	0.44	−0.37	–	–	0.61	−0.34	–	–
Self-accountability	–	0.80	–	–	−0.28	0.79	–	–
Emot. foc. cop. pot.	–	–	−0.62	-0.39_b	–	–	0.59	-0.46_b
Prob. foc. cop. pot.	–	–	-0.25_a	−0.60	–	–	-0.28_a	-0.64_c
Future expectancy	–	–	-0.31_a	-0.46_b	–	–	-0.39_a	$-0.58_{b,c}$

Core Relational Themes	*Emotions* Anger	Guilt	Fear/ Anxiety	Sadness	*Emotions* Anger	Guilt	Fear/ Anxiety	Sadness
Other-blame	0.64	-0.26_a	-0.24_a	-0.26_a	0.65	−0.25	–	–
Self-blame	0.29_b	0.53	0.31_b	0.26_b	–	0.56	–	–
Threat	–	0.27_b	0.52	0.32_b	0.33_a	–	0.63	0.43_a
Loss/Helplessness	–	–	0.29_b	0.39_b	–	–	0.46_a	0.48_a

Note: For clarity of presentation only correlations significantly different from zero at $P < 0.001$ are presented. For each of the four analyses, all coefficients within each row or column not sharing a common subscript differ significantly at $P < 0.05$.

For example, consistent with the hypothesised role of emotion-focused coping potential in distinguishing threat from other core relational themes, emotion-focused coping potential was more highly correlated with threat than with any other theme, and threat was more highly correlated with emotion-focused coping potential than with any other appraisal component. In addition, threat was more highly correlated with fear/anxiety than with any other emotion; and fear/anxiety was more highly correlated with threat than with any other core relational theme.

Although analogous patterns were observed for the appraisals associated with anger and guilt, the differentiation was less evident for sadness. Some support was obtained for the hypothesised differentiation of loss/helplessness from threat; problem-focused coping potential was consistently more strongly correlated with loss/helplessness than it was with threat, and this correlation was significantly higher than the correlation between loss/helplessness and emotion-focused coping potential. However, the contribution of future-expectancy to the definition of loss-helplessness was less clear. Moreover, loss/helplessness did not show its predicted unique relationship with sadness. Despite being correlated with fear/anxiety significantly less than was threat, loss/helplessness was as highly correlated with fear/anxiety as it was with sadness, and in an analogous fashion, sadness was as highly correlated with threat as it was with loss/helplessness.

In the second set of analyses, the relative predictive abilities of the appraisal components and the core relational themes were examined by regressing each emotion first on just its hypothesised core relational theme, and second on just the set of three or four appraisal components hypothesised to define that theme (see Table 1). These regression analyses were repeated for both stages of the experimental task. Table 5 lists the proportion of emotion variance accounted for in each analysis (shrunken R^2, Cohen & Cohen, 1983, pp. 105–107).

As Table 5 indicates, with the exception of anger, for which the appraisal components were substantially less predictive than was the core relational theme, the appraisal components and core relational themes predicted the emotions to similar degrees. Moreover, these levels of prediction compare quite favourably to those obtained by Ellsworth and Smith (1988b). Using a somewhat more complicated dimensional model, these investigators were able to account for 25%, 23%, and 21% of the variance in guilt, fear/anxiety, and sadness, respectively.

The relative inability of the appraisal components to predict anger appears to be due to the already noted dissociation between other-accountability and other-blame within the cancer scenario. When this scenario was removed from consideration, and the analyses were repeated on the 146 subjects who imagined themselves in one of the other three scenarios, the three anger-relevant appraisal components accounted for

TABLE 5
Relative Predictive Validity of Appraisal Components and Core Relational Themes for Each Emotion

Emotion	Proportion of Variance Accounted for By:			
	Appraisal Components		*Core Relational Themes*	
	Stage 1	*Stage 2*	*Stage 1*	*Stage 2*
Anger	0.03	0.16	0.40	0.42
Guilt	0.29	0.28	0.28	0.31
Fear/Anxiety	0.24	0.32	0.27	0.40
Sadness	0.22	0.28	0.15	0.23

Note. The coefficients in each column reflect the shrunken multiple squared correlations for each emotion within each stage obtained by regressing that emotion on either the three or four appraisal components or the single core relational theme hypothesised to be theoretically relevant to that emotion (See Table 1). With the exception of the coefficient obtained for anger in Stage 1 using the appraisal components, which is significantly different from 0 at $P < 0.05$, all listed coefficients are significantly different from 0 at $P < 0.001$.

28% and 38% of the variance in anger in the first and second stages, respectively (both *P*s < 0.001). These levels compare favourably to the 31% and 43% of the variance in anger accounted for by other-blame in these same subjects, and to the 36% of the variance in anger accounted for by Ellsworth and Smith (1988b).

Thus, with the exception of anger within the cancer scenario, both the individual appraisal components and the core relational themes were found to be associated with their theoretically relevant emotions to similar degrees, and at levels comparable to previous findings. These results suggest that our conceptualisation and measurement of the appraisal components were adequate, and they support our view of the appraisal components and core relational themes as alternative descriptions of the relational meaning that underlies each emotion.

GENERAL DISCUSSION

The present data provide, we believe, strong experimental support for the predictive and discriminant validity of the specific appraisal model we proposed for anger, guilt, and fear/anxiety, but they provide weaker support for sadness. Not only were the first three emotions highly correlated with the theoretically appropriate appraisals, but they were more highly correlated with those appraisals than with any others.

That much of the emotion-related variation in appraisal was directly produced by the experimental manipulations provides particularly strong evidence for the strength and specificity of the observed relationships.

Manipulation of the appraisals theoretically relevant to anger in Stage 1 produced predicted differences in reported anger. In Stage 2, the appraisals theoretically associated with anger, guilt, and fear/anxiety were successfully manipulated within each of the four scenarios, and these manipulations resulted in the predicted changes in reported emotion. This model, therefore, provides a firm theoretical foundation upon which to base the further development and testing of a comprehensive theory of emotion.

We believe that an important contribution of this model is that it describes relational meaning, which we view as the core of an emotion, at two distinct levels of analysis, molar and molecular. The molar analysis synthesises the essence of the relational meaning into a single complex concept, and the molecular analysis identifies the individual appraisal components that, together in a particular configuration, imply that meaning. The simultaneous consideration of appraisal at both levels provides a theoretical bridge for relating dimensional appraisal models (e.g. Frijda et al., 1989; Scherer, 1984; Smith & Ellsworth, 1985), which have conceptualised appraisal in a manner akin to our appraisal components, to models of discrete emotions (e.g. Plutchik, 1980), which have treated appraisal more categorically in a manner akin to our core relational themes.

Even more importantly, the two levels of analysis are complementary, and, we believe, their respective properties lend them to different uses in the study of emotion. For example, the individual appraisal components, which reflect the issues that must be evaluated in a particular way for an emotion to be generated, should be especially useful for investigating the environmental and dispositional antecedents of emotion, as well as for predicting how these characteristics combine to produce the relational meanings for each emotion (see Lazarus, 1991a; Smith & Lazarus, 1990; and Smith & Pope, 1992, for theory and research along these lines).

In addition, given a particular emotional reaction, knowledge of the specific appraisal components that led to that reaction represents an important inferential tool for diagnosing the basis of the emotional reaction—for instance, why this particular individual responded to this particular set of circumstances in this particular way. This knowledge, in turn, could be quite useful clinically in designing interventions to alleviate troubled person-environment relationships (cf. Lazarus, 1989; Smith, in press; Smith & Lazarus, 1990).

The core relational themes, on the other hand, are more global, and reflect how the individual appraisal components combine into a central relational meaning for each emotion. These meanings are emergent in the sense that the relational harms and benefits they represent are holistic entities whose coherence is not easily captured by representing the relevant appraisals as a set of distinct judgements. We consider the core relational themes to be greater than the sum of the appraisal components that imply them, and to have properties and adaptational implications that cannot be easily derived from considering just the appraisal components taken individually.

Knowledge of the relevant core relational themes, because they efficiently represent the adaptational meanings around which emotions are organised (Smith & Lazarus, 1990), should be especially useful in investigating the effects of appraisal in shaping the physiological activities and the modes of action readiness associated with various emotions (e.g. Frijda, 1987; Frijda et al., 1989), as well as the influence of emotion on coping. The physiological activities and modes of action readiness are said to be organised around the adaptational requirements of the appraised encounter, and coping behaviours reflect the person's attempts to respond to those requirements. To us these adaptational requirements seem to be better expressed at the molar level than at the molecular level, and we would expect consideration of the core relational themes to be substantially more predictive of such things as action readiness and actual coping behaviour than consideration of the individual appraisal components.

In considering the utility of this model for future research, it is important to acknowledge that although most findings supported the model, there were unexpected results that raise important issues. Anger and guilt both demonstrated systematic dissociations from appraisal within the first stage of the cancer scenario, and the predictions for sadness generally received only weak support.

The failures of prediction for sadness can be partially attributed to ineffective manipulations or irrevocable loss/helplessness, the relational theme theoretically associated with that emotion. In the first manipulation, loss/helplessness was substantially elevated in only one of the two intended scenarios—the cancer scenario. It was no higher in the course scenario than in the two scenarios associated with other-blame (friend and TA). In the second manipulation, the loss/helplessness conditon did not differentially produce increases in appraised loss/helplessness relative to the other conditions. Because the path-analyses for both Stages 1 and 2 indicated that the appraisal model nonetheless accounted for a significant amount of the variance in sadness, the predictions for sadness may gain more support with better manipulations of loss/helplessness.

However, we suspect the weak findings may also reflect more fundamental puzzles about the nature of sadness. The model we employed was unable to differentiate sadness from fear in either experimental stage. In contrast, fear/anxiety and guilt were successfully differentiated from the other emotions in both stages even though their relevant appraisals were not directly manipulated in the first stage. In addition, several previous studies have also failed to find strong, discriminable relationships between specific cognitions and sadness (e.g. Ellsworth & Smith, 1988b; Smith & Ellsworth, 1987), and the special anomalies of sadness have been noted by Lazarus (1991a, c).

A major problem with sadness may be one of emotional *language*. Whereas the names of the other emotions examined—"anger", "fear/anxiety", and "guilt"—appear to denote fairly specific and acute emotional states, the meaning of "sadness", at least in the vocabulary of our subject population, appears to be considerably less specific. Perhaps many forms of sadness are really mood states rather than acute emotions. Also, as a counterpoint to "happy", which people use as a general-purpose adjective to describe a variety of emotional states associated with positive outcomes (cf. Ellsworth & Smith, 1988a; Weiner, 1985), we suspect, as Weiner (1985) has proposed, that people often use the term "sad" (and synonyms) nondifferentially to describe their emotional reactions to a variety of harmful circumstances. For example, the first stage of the friend scenario not only elicited fear/anxiety-relevant appraisals and fear-anxiety in a theory-consistent manner, but also elicited self-reported sadness in the relative absence of appraisals of loss/helplessness.

Nonetheless, our position differs from Weiner's (1985) in two important respects. First, the observed differentiation of sadness from both anger and guilt suggests that rather than a fully general-purpose adjective to describe responses to all kinds of harm, the term "sad" describes responses to harm in which the prospects of improvement are viewed as poor. Secondly, we do not consider the reactions subsumed by the term sadness to reflect a single undifferentiated state. Instead, we propose that the concept of sadness encompasses a number of distinct states, ranging from distress to resignation, that are associated with various stages of disengagement from a lost commitment (Lazarus, 1991a; Klinger, 1975; Smith & Lazarus, 1990). Each of these is hypothesised to be produced by distinct appraisals, and to have distinct motivational consequences.

We are also somewhat at a loss to explain the dissociations between appraisal and emotion within the cancer scenario, but we suspect they reflect subjects' attempts to cope with societal proscriptions against blaming helpless (and especially terminally ill and loved) victims. For instance, the dissociation of other-accountability and other-blame may have reflected subjects' attempts to deny being angry at their dying relative, even though they may have held that relative accountable for the disease, and perhaps the guilt they reported was in response to the very anger they were attempting to deny. Emotional states in these kinds of situations are likely to be complex and heavily laden with coping processes that address both the conditions producing these emotions and their social and intrapsychic implications.

Thus far, in conducting this study and in presenting and discussing the results, we have operated under the important, possibly controversial assumption that subjects were emotionally engaged while performing the imagery task. We assume that the subjects actively imagined themselves in the described scenarios, responded emotionally to the scenario contents, and then described their actual emotional reactions. Therefore, we would like to conclude by considering the implications of this assumption for interpreting our findings.

We made this assumption on the basis of previous imagery research which, using similar stimuli and instructions (e.g. Smith, 1989; Smith et al., 1986), has consistently demonstrated that subjects engaged in imagery produce (low-level) patterns of physiological activity consistent with the imagery-induced emotions they report experiencing. Although the physiological measures required to verify that our subjects were similarly engaged are not available in this study, we know of no compelling reason why subjects in the present study would have been systematically different from those in the previous ones.

Nonetheless, it is possible that our subjects might not have been emotionally engaged, but might have been performing a largely intellectual exercise in which they reported hypothetical emotions on the basis of their implicit emotional theories. If this were the case, we believe the conclusions to be drawn from the present experiment would change only a little. Instead of having directly demonstrated strong links between specific appraisals and actual emotional reactions, we would have demonstrated that these same strong appraisal-emotion linkages are present in our subjects' implicit theories of emotion.

In other words, at minimum we have demonstrated that our subjects' theories of emotion contain elaborate, specific, and shared hypotheses concerning the emotional consequences of specific appraisals. Because, as others have argued (e.g. Shaver et al., 1987), implicit theories are largely based on personal experience and tend to mirror that experience accurately, these hypotheses are likely to have considerable validity. In effect, we would then have indirectly demonstrated links between appraisal and emotion. Naturally, one would want to verify the validity of these links in subsequent research, but who would not want to do that in any event? Thus, whether one interprets our results as documenting the existence of actual appraisal-emotion relationships, or the presence of such relationships in our respondents' intuitive theories, we believe the present study provides a strong theoretical model upon which to base future research.

POSTSCRIPT: DIFFERENCES BETWEEN THE PRESENT MODEL AND THAT OF LAZARUS (1991a).

As previously noted, the model currently advanced by Lazarus (1991a, c) differs in a number of respects from the one examined in this article, which Smith (in press; Smith & Pope, 1992) continues to advance. In order to maintain clarity about our respective positions, we now briefly discuss the major differences between the models that are most relevant to the present article.

We both are seeking to identify the appraisal components and core relational themes that adequately capture the central relational meanings distinguishing the various emotions. Our aim is to generate the set of components and themes that best permits a parsimonious, deterministic analysis. We differ, in part, in how parsimonious to get without loss of essential meaning, and in the identity of some of the specific concepts needed to accomplish this.

One source of disagreement concerns whether primary appraisal should include a component capturing the specific contents of the goal(s) at stake in the encounter. Smith (e.g. Smith & Pope, 1992), although considering specific goal contents to be important antecedents of primary appraisal, does not consider them to be components of primary appraisal that differentiate directly among the emotions. Lazarus, in contrast, has long pursued the argument that specific goal contents distinguish among different emotions, such as anger, guilt, shame, and pride.

In developing his recent book, Lazarus (1991a) has come to believe that the concept of goal content is best subsumed under the concept of the strength of a number of different types of ego-involvement, for example, preservation and enhancement of self-esteem for anger and pride, wanting to sustain moral values for guilt, living up to an ego-ideal for shame, sustaining (existential) meanings and ideas in which we are invested for anxiety, such as commitment to other persons and their well-being and one's own life goals. Therefore, for Lazarus, goal content now becomes the appraisal component of type of ego-involvement, which in guilt is having transgressed a moral imperative, and in shame is having failed to live up to an ego-ideal, and so on. For example, consistent with the Smith formulation, both shame and guilt include the appraisal component of self-accountability, but it is the type of ego-involvement, which the Smith model does not include as an appraisal component, that, according to Lazarus, distinguishes between these two emotions.

A second point of disagreement concerns the necessity of maintaining problem- and emotion-focused coping potential as distinct components of appraisal. Smith (e.g. Smith & Pope, 1992) believes the distinction between these components to be important in differentiating between sadness and fear/anxiety and the action tendencies associated with these emotions. Lazarus no longer considers the distinction between these two appraisal components to be relevant for emotion generation, although the distinction between problem-focused and emotion-focused coping *strategies* remains important for the study of coping. His reasoning is that it does not matter for the emotion being shaped whether people believe they can cope by changing the situation or by intrapsychically changing the relational meaning. Instead, what matters is the degree to which they believe they can cope through any means. In addition, whereas Smith believes appraised coping potential is largely irrelevant to anger, Lazarus believes this component has a role in generating anger (proposed to be associated with relatively high coping potential) and in differentiating it from sadness and anxiety (proposed to be associated with low coping potential).

A further area of disagreement concerns the complexity of the core relational themes associated with the various emotions. Whereas Smith restricts the themes to combining outcomes along only three or four appraisal components, the Lazarus set is far more complex and elaborate in ways that go beyond the addition of the component of type of ego-involvement already discussed. For instance, Lazarus distinguishes between fright (fear) and anxiety, whereas Smith does not. For Lazarus, the core relational theme for anxiety is facing uncertain, existential threat, whereas for fright the threat is sudden and concrete, and the core relational theme is the imminent danger of physical harm. Clearly, these core relational themes overlap with the appraisal of danger or threat used in the present research for combined fear/anxiety, but they are more complex.

Similarly, drawing upon Aristotle's definition of anger, Lazarus (1991a, c) now defines the core relational theme for anger as a demeaning offence against me and mine. In addition to including the ego-involvement component of enhancing self-esteem, this theme captures the idea that the provocation for anger must be an action appraised as a personal slight that is judged to be arbitrary, intentional, or malicious, and that the provoking agent is capable of having acted otherwise. Thus, although both Smith and Lazarus agree that direction of accountability toward another is a key appraisal component in anger, Lazarus thinks the core relational theme for anger contains considerably more than this.

It should be noted that the theory building is a dynamic process—changing somewhat with time and what is observed—rather than a static arrangement, especially in a relatively new, emerging area of thought and investigation. In the area of emotion, where we are now trying to make sense of the cognitive processes underlying the emotions, we are still in an early stage of conceptualisation and evidence, and we must take a flexible and open approach in the struggle to understand and predict. The present research advances understanding by addressing many relevant appraisal components and core relational themes, even if, as Lazarus presumes, they are as yet problematical and imcomplete. The authors hope that the efforts and thinking underlying this research will stimulate speculation, discussion, and research by others, and that it moves us toward a better understanding of the relational meanings and appraisal components in emotion.

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APPENDIX

COMPLETE TEXT OF THE TA, CANCER, AND COURSE SCENARIOS

TA

Stage 1

You are enrolled in a course that is a prerequisite for your intended major. In general you are finding the course quite interesting and enjoyable, and you believe that you've chosen the right major. However, you don't get along with your TA. In your discussion section you often disagree with what he (she) says, and he (she) is highly critical of your comments. Recently you wrote a big paper for the class that your TA graded. You were really interested in the topic of the paper, and you wanted to show that you knew what you were talking about. So, you researched the topic very carefully, and put a lot of effort into writing what you believe is one of the best papers you'd ever written.

Today at the end of your discussion section the TA hands the papers back, and you see that you've been given a "C−".

Stage 2

All Versions. After section the TA refused your request to regrade your paper, and said that you received the grade you did because the research was shoddy, and the paper was poorly written. In fact, he (she) said that the paper was one of the worst he (she) ever read, and that you should feel lucky to be getting a C−.

Other-blame. You can't believe that the TA is doing this to you. You know that the paper is nowhere near as bad as the TA says, and believe that he (she) had no right to persecute you like this.

Self-blame. Thinking back, you realise that you've been obnoxious and are at least partially to blame for this situation. You've given this person a very hard time. You've constantly argued with him (her), and because of you he's (she's) never been able to cover all the material he (she) planned to during section. Thinking about it, you realise that you've behaved badly, and really can't blame this person all that much for being hostile.

Threat. You don't know how you're going to get by in this course. The TA obviously can't stand you and isn't going to give you the benefit of the doubt, putting you in danger of serious academic trouble. You don't know whether there's anything you can do to straighten out things so that your work will be evaluated objectively and you'll receive the grade you deserve in this course.

Loss/Helplessness. You realise there's nothing you can do to please this person. You put out your very best effort and it was torn to shreds. This incident has ruined the whole course for you. Even though you had been enjoying the class, and had found the material and professor to be very interesting, you're certain that there's no way you'll be able to do well or enjoy the class as long as you have this TA. This is a great personal loss.

CANCER

Stage 1

You have a relative (e.g. aunt, uncle, or grandparent) who was always your favourite when you were growing up. You love this relative dearly. He (she) always took you places and told you amusing stories. Even though he (she) is older, you've always been able to talk about your problems with him (her), and on several occasions he (she) has gotten you out of trouble with your parents. The only thing that bothers you about this relative is that he (she) is a heavy smoker. In the past you've tried to get him (her) to quit, but to no avail.

You've just been told that your relative is in the hospital with lung cancer, which you know is often fatal within a short time.

Stage 2

All Versions. A couple of weeks have passed, and several days ago your relative had surgery. The news is bad. The cancer has spread so much that it's inoperable. Although the doctors will continue to do everything they can, they give your relative less than two months to live.

Other-blame. You can't understand why your relative let this happen to him(her)self. You don't understand why he (she) kept on smoking, even though he (she) knew it was dangerous, and even though you'd begged him (her) to quit. You also can't understand why he (she) waited so long before seeing a doctor. His (her) behaviour seems irresponsible and thoughtless of others.

Self-blame. You blame yourself for what has happened. You believe that you've let your relative down—that you weren't insistent enough in trying to get him (her) to stop smoking. If only you had made your relative realise how much you cared about him (her) and how important it was to you that he (she) quit smoking, then maybe this whole situation could have been avoided.

Threat. There is great danger he (she) will die, but no one can be sure. You don't know whether to believe the doctors or not. What if they're right and your relative dies? If that happens you don't know what you'll do without him (her) to turn to in times of trouble, or whether you'll ever again be able to enjoy the things you used to do together.

Loss/Helplessness. For the first time you're totally sure that your relative is going to die, and that there's nothing you or the doctors can do about it. You realise that you'll never again be able to go to this person with your problems, or share the enjoyable times you used to have with this relative. This is a great personal loss.

COURSE

Stage 1

This semester you've been taking a course that is required for your intended major. You selected this major because you've always been interested in the field, and you believe that it's ideal preparation for your career aspirations, which you've held for a long time. You've found this course to be much more difficult than you expected, and you scored well below the median on the midterm. Realising that it was very important for you to do well on the final, you redoubled your efforts, studied as hard as you could, and frequently sought out the TAs for help. You thought that the final was difficult, but left thinking that you had done fairly well.

The grades have just been posted, and you discover that you again scored well below the median, and have received a "C−" in the course.

Stage 2

All Versions. When you talked to your professor about the grade, he (she) explained that your performance was really in the low "D" range, but because you were obviously trying so hard, he (she) already raised your grade to a "C−", and couldn't in good conscience raise it any further.

Other-blame. Thinking back over the semester, you realise that the TAs were not very helpful. They always seemed to be in a rush to get rid of you when you went to see them, and they didn't know how to explain things clearly so that you could understand them. You believe that if the TAs had been competent and had done their jobs properly, you would have done much better in the course.

Self-blame. Thinking back over the semester, you blame yourself for doing so poorly in the class. You realise that although you worked very hard you made a lot of mistakes. You almost always waited until the last minute before completing your assignments or going to the TAs for help. Because of this the TAs were always very busy when you went to see them, and they couldn't devote much time to your problems. You believe that if only you had been more organised you would have done much better in the course.

Threat. You don't know what to do. You worked as hard as you could, and still you nearly flunked the course. You believe that if you stay with this major, no matter how hard you try you're in great danger of doing poorly in your classes and winding up with a rotten academic record. At the same time, however, because you've held your career aspirations for so long, and because they are so important to you, you really don't want to quit the major and abandon your dreams and plans.

Loss/Helplessness. You believe that you're not cut out for this major. You worked as hard as you could, and still you nearly flunked the course. You're certain that you should change your major and career plans. Right now, you're thinking about how long you've dreamed of achieving your career aspirations, how long you've been interested in this particular major, and how now you have to abandon these dreams and plans. This is a great personal loss.